SOV/129-58-9-9/16

The Possibility of Increasing the Carburization Temperature
Inside a Solid Carburizer to 980°C

manufactured components indicates that as regards
hardness, the depth of the case hardened layer and
warping of the components, carburization at 950°C does
not differ from that effected at 910°C. In the
experiments described in this paper the carburization
temperature was increased to 980°C. Investigation of
the quality of the carburized layer and determination
of the mechanical properties was effected on specimens
of the steels 20KhGR, 20KhNM, 20Kh and 20 for which the
C, Mn, Cr contents and the size of the austenite grains
are entered in Table 1. The investigations were
extended to components (gear, cam) which were case
hardened to depths of 1, 1.4 and 1.6 mm. As a
carburizing agent a mixture of a solid (peat) carburizer
with an addition of 20% fresh carburizing material was
used; the content of barium carbonate in the working
mixture was 3.4 to 5.1%. Particular attention was
devoted to the deformation which was verified on the
highest stressed and most complicated components; these
Card 2/4   measurements were carried out under the guidance of

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The Possibility of Increasing the Carburization Temperature
Inside a Solid Carburizer to 980°C

A. A. Shlyapnikov.   The results obtained for specimens
which were incorrectly case hardened and for specimens
after carburization, hardening after reheating and
low temperature tempering are entered in Table 2 and
these show that the strength, toughness, ductility
and surface hardness of the specimens do not deteriorate
as a result of increasing the carburization temperature
to 980°C.   The results obtained for a cross piece of a
motor car differential and for gear teeth are also
graphed.   The obtained results have shown that
provided a second heating prior to hardening is applied,
it is recommended to carburize components inside a
solid carburizer at 980°C; the quality of the case
hardened layer as regards carbon content and its
distribution improves and the static strength of the
components does not decrease.   The productivity of the
process of carburization at 980°C is 40 to 50% higher
than for a carburization temperature of 910°C and

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The Possibility of Increasing the Carburization Temperature
Inside a Solid Carburizer to 980°C

15% higher than for a carburization temperature of 950°C.
There are 4 figures, 2 tables and 2 Soviet references.

ASSOCIATION: Gor'kovskiy avtomobil'nyy zavod
(Gorkiy Automobile Plant)

1. Steel--Hardening   2. Grains (Metallurgy)--Growth

Card 4/4

TARASov, A. M.

129-1-4/14

AUTHOR: Tarasov, A.M., Candidate of Technical Sciences.

TITLE: Influence of Boron on the Kinetics of the Growth of the
            Austenite Grain and on the Size of the Real Grain (Vliyaniye
            bora na kinetiku rosta zerna austenita i velichinu deystvit-
            el'nogo zerna)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.1,
                                    pp. 17 - 20 (USSR)

ABSTRACT: A new, case-hardening chromium-manganese steel was intro-
            duced in the Gorki Automobile Works which is alloyed with small
            admixtures of boron. The steel possesses high-strength
            characteristics and satisfactory technological properties. A
            part of the components produced from this new steel is subjected
            to gas cementation and quenching directly in oil. Therefore,
            the austenite grain in this steel should have a reduced tendency
            to grow during heat treatment. Owing to the contradictory
            views of various authors on the influence of boron on the
            growth of the austenite grains, the solution of a number of
            technological problems of heat treatment has become more
            complicated in the case of boron steels. Therefore, the author
            was interested in studying the kinetics of growth of the
Card1/4   austenite grain in boron-containing steel. The experiments

129-1-4/14

Influence of Boron on the Kinetics of the Growth of the Austenite Grain and on the Size of the Real Grain.

were effected on steels smelted in a laboratory induction furnace of 100 kg capacity with a basic lining and using rejects of high-grade steels and ferro-alloys as the charge. Slag (50% CaO, 50% CaF$_2$) was introduced to an extent of 3-4% of the total weight of the melt and the steel was kept under the slag for 30 to 40 min. Deoxidation was by means of aluminium and by ferro-silicon. The boron was introduced as ferro-boron which contains 12.7% B, 12.72% Al and 1.15% Si. The required quantity of ferro-boron was introduced into the tundish after filling it half with steel. The experimental ingots were forged into square rods of 16 x 16 mm and then annealed. The grain was revealed by means of cementation at 920, 1 000 and 1 100 °C for heating durations of 5, 10 and 20 hours. The case-hardening was effected in a peat carburiser containing barium carbonate. The chemical compositions of the steels of the experimental ingots of No.1 smelting and the austenite grain size are entered in Table 1. Table 2 shows the dependence of the austenite grain size on the boron addition and the cement-ation regime. The chemical composition of the ingots of No.2

Card2/4 smelting are entered in Table 3. The graphs, Figs. 1 - 3, show

129-1-4/14

Influence of Boron on the Kinetics of the Growth of the Austenite
Grain and on the Size of the Real Grain.

the dependence of the austenite grain size on the annealing time
during cementation and the boron content for temperatures of
920, 1 000 and 1 100 $^\circ$C, respectively. The character of the
micro-structure of specimens after hardening in oil from 870 $^\circ$C
and tempering at 200 $^\circ$C is reproduced in Fig.4. It is concluded
that the optimum boron content which does not bring about a
growth in the austenite grain size in the chromium-manganese
steel 20XГ6 for the case of ordinary chemical-heat treatment is
0.0015 to 0.003%. Heating of steel containing such boron
quantities for 20 hours at 1 000 $^\circ$C did bring about a growth of
the austenite grains; an appreciable grain growth can be
detected by using steel with an initial austenite grain size
8 - 6 balls. A boron content of 0.005% is undesirable and 0.06%
and above is inadmissible due to intensive grain growth under
practical conditions of chemical-heat treatment; during heat
treatment of boron, it must be taken into account that there will
be some coarsening of the grain if the boron content is 0.004%
and higher. After hardening and low temperature tempering,
boron steel has a clearly-pronounced acicular structure which
Card3/4 is particularly intensive in the case of boron contents above
0.003%.

129-1-4/14
Influence of Boron on the Kinetics of the Growth of the Austerite
Grain and on the Size of the Real Grain.

   There are 4 figures and 3 tables and 8 references, 5 of which
   are Slavic.

ASSOCIATION: Gorki Automobile Works (Goŕkovskiy Avtozavod)
AVAILABLE: Library of Congress.
Card 4/4

SOV/129-59-5-13/17

AUTHOR: A.M. Tarasov, Candidate of Technical Sciences

TITLE: Influence of Boron on the Temper Brittleness of Constructional Steel (Vliyaniye bora na khrupkost' pri otpuske konstruktsionnoy stali)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov. 1959, Nr 5, pp 54-57 (USSR)

ABSTRACT: As a starting material for the investigations, steel was used from three series of melts produced in a laboratory induction furnace of 100 kg capacity. The chemical analyses as well as the respective austenite grain sizes are entered in a table on page 54. In Fig 1 the dependence of the impact strength on the tempering temperature is graphed. The graph in Fig 2 shows the positive influence of small additions of boron on reducing the tendency of the steel to develop irreversible temper brittleness (full line curves refer to steel without boron addition, broken line curves refer to steel with an addition of 0.003% boron). In Fig 3 the impact strength of notched specimens as a function of the tempering temperature is graphed for steel without boron
Card 1/2   and for steels with various boron additions. On the basis

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Influence of Boron on the Temper Brittleness of Constructional Steel

of the obtained results it is concluded that small additions of boron do not bring about type I irreversible temper brittleness. Optimum quantities of boron (about 0.003%) have a favourable effect and reduce the proneness of the steel to develop irreversible temper brittleness. However, if the steel contains 0.003% or more boron the tendency of the steel to develop reversible temper brittleness increases.

Card 2/2   There are 3 figures, 1 table and 11 references, 10 of which are Soviet and 1 English.

ASSOCIATION: Gor'kovskiy Avtomobil'nyy Zavod (Gor'kiy Automobile Works)

TARASOV, A.M. [Tarasau, A.M.]

In 1960. Rab. i sial. 35 no.12:2 D '59   (MIRA 13:3)

1. Predsedatel' Sovnarkhoza BSSR.
        (White Russia--Industries)

TARASOV, A. M., Cand Tech Sci -- (diss) "Research and choice of opt-
imal phases of gas distribution in four-cycle diesel engines." Khar'-
kov, 1960. 16 pp with graphs; (Ministry of Railroads USSR, Khar'kov
Inst of Railroad Transport Engineers im S. M. Kirov); 150 copies; free;
(KL, 18-60, 153)

TARASOV, A.M., inzh.

Some problems relative to investigating the filling of internal-combustion engines. Trudy KHIIT no.35:76-84 '60.   (MIRA 13:10)
(Gas and oil engines)

TARASOV, A.M., inzh.; MISHCHENKO, P.P., inzh.

Consumption factor of the intake systems of motors. Energo-
mashinostroenie 6 no.2:15-17 F '60.   (MIRA 13:5)
                    (Gas and oil engines)

S/133/61/000/001/012/016
A054/A033

18.1150   1496

AUTHOR: Tarasov, A.M., Candidate of Technical Sciences

TITLE: The Practice of Using Cemented 20ХГР (20KhGR) Grade Boron Steel
            in the Manufacture of Car Parts

PERIODICAL: Stal', 1961, No. 1, pp- 64 - 68

TEXT: At the Gor'kovskiy avtomobil'nyy zavod (Gor'kiy Automobile Plant)
the heavy-duty car parts were produced from 20ХНМ (20KhNM) grade nickel-molybden-
um steel, developed from the 15НМ(15NM) and 20НМ(20NM) steels, similar in com-
position to the 4615-4620 type steels used by American firms. Since the 20KhNM
type steel contains as much as 1.65 - 2.0% Ni and 0.2 - 0.3% Mo, attempts were
made in the GAZ to replace this kind of steel by structural steels not containing
nickel and molybdenum, but alloyed with boron. The tests resulted in the develop-
ment of a new brand of steel: (20KhGR) the composition of which is as follows:

	C	Mn	Si	P	S	Cr	Ni	Mo	B
20KhGR	0.17-0.24	0.7-1.0	0.17-0.37	≤0.04	≤0.04	0.8-1.1	≤0.30	-	0.002-0.005
20KhNM	0.17-0.25	0.4-0.7	0.17-0.37	≤0.04	≤0.04	0.4-0.6	1.6-2.0	0.20-0.30	-

Card 1/8

22578
S/133/61/000/001/012/016
A054/A033

The Practice of Using Cemented 20ХГР (20KhGR) Grade Boron Steel in the Manufacture of Car Parts

The new case-hardening steel, produced at the Zlatoustovskiy metallurgicheskiy zavod (Zlatoustovsk Metallurgical Plant) was analysed as to mechanical properties and structural characteristics and compared with the Ni - Mo steel formerly used at the GAZ. With regard to hardening properties the new boron steel was found to be superior to the 20 KhNM grade, with the same hardening conditions applied for both steels. At a distance of 9 mm from the face of the specimens, a much greater homogeneity could be observed in the boron steel warranting greater and more stable strength for the car parts. The heat treatment conditions of boron steel require oil hardening at 870°C, tempering at 200°C, for the Ni and Mo-steels oil hardening at 860° and 780°C and tempering at 200°C. Then the steels must have the following mechanical properties: (numerator: 20KhGR, denominator: 20KhNM):

σ_B kg/sq mm	σ_s kg/sqmm	δ %	ψ %	a_k kg,/sq cm
100	80	9	50	8
90	70	11	50	8

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S/133/61/000/001/012/016
A054/A033

The Practice of Using Cemented 20ХГР (20KhGR) Grade Boron Steel in the Manufac-
ture of Car Parts

In spite of the more severe heat treatment, the boron steel corresponds to the
standard in all cases while the 20KhNM steel does not meet the standards as to
yield point and tensile strength. The conditions of heat treatment and optimum
mechanical properties for the 20KhGR, 20KhNM and 12KhN3A grade steels are shown
in table 1. Graph 6 shows that the resilience of the 20KhGR steel is about 2 kgm/
sq cm higher than that of the 20KhNM grade, although both steels show a rather
high resilience up to a temperature of 75°C. Under the same heat treatment the
σ_s/σ_B ratio is 0.88 for both steel grades, but if the 20KhNM grade steel is heat-
treated under its conventional conditions, its σ_s/σ_B ratio is 0.78, i.e., lower
than that of the boron steel. The higher strength of the 20KhGR type, 0.002-0.005
% boron steel shows also in the strength of the car parts produced from this steel,
during road tests. Boron steel was employed for the production of the hinge pins
for GAZ-63 type cars, which after forging and mechanical tooling are casehardened
in gas to a depth of 1.5 - 1.8 mm, after oil-hardening at 870°C and tempering at,
200°C. Hardening properties, surface hardness and torsional strength was found
to be higher in the 20KhGR steel hinge pins, than in those made of 20 KhNM steel,
(table 2). The new steel was also used in the production of differential pinions

Card 3/8

22578
S/133/61/000/001/012/016
A054/A033

The Practice of Using Cemented 20 X Г P (20KhGR) Grade Boron Steel in the Manufac-
ture of Car Parts

of the rear axle and differential shaft gears and proved to be suitable for cut-
ting. After heat treatment it showed a permissible degree of deformation and
sufficient strength. Similar favourable experience was obtained for the driven
and driving gears of the VOLGA cars, as to malleability, machinability, surface
hardness, after cementation hardening and tempering. There are 6 figures, 3 tables
and 3 Soviet references.

Card 4/8

TARASOV, A.M., kand.tekhn.nauk; SEMENCHENKO, M.P., inzh.; GUR'YEV, Z.I.,
inzh.; DONTSOVA, A.M., inzh.; MALYGINA, T.I., inzh.

Use of structural steels with small additions of boron at the
Gorkiy Automobile Plant. Metalloved. i term.obr.met. no.12:
16-21 D '61.   (MIRA 14:12)

1. Gor'kovskiy avtomobil'nyy zavod.
                    (Gorkiy—Automobile industry)
                          (Boron steel)

VERNER, N.D., inzh.; TARASOV, A.M., kand.tekhn.nauk

Investigating the causes of the destruction of pins fastening
the D50 engine to the foundation frame. Trudy KHIIT no.50:5-13
'61.   (MIRA 15:12)
                        (Diesel engines)

TARASOV, A.M., kand. tekhn. nauk; GLINER, R.Ye.

Using 45 carbon steel for manufacturing ball pins of motor-
vehicle steering rods. Avt. prom. 29 no.8:36-38 Ag '63.
                                            (MIRA 16:11)

1. Gor'kovskiy politekhnicheskiy institut i Gor'kovskiy
avtomobil'nyy zavod.

L 25647-65   EPR/EWA(o)/EWT(d)/EWT(m)/T-2/EWP(f)
ACCESSION NR: AR5003750   S/0273/64/000/011/0002/0002

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya. Otd. vyp., Abs. 11.39.8

AUTHOR: Tarasov, A. M.; D'yachenko, V. G.

TITLE: Gas exchange processes in combination engines

CITED SOURCE: Tr. Khar'kovsk. in-ta inzh. zh.-d. transp. vyp. 69, 1964, 5-13

TOPIC TAGS: internal combustion engine, gas admission, engine testing, engine
construction

TRANSLATION: A method is presented for calculating the process of gas interchange.
This method makes it possible to determine the optimum gas distribution phases and
to compute the residual gas factor. The proposed method also permits a thorough
analysis of the intake process and makes it possible to plan ways for improving
this process after construction and testing of the engine.

SUB CODE: PR   ENCL: 00

Card 1/1

SOKOLOV, V.S., inzh.; LAZAREV, A.A., inzh.; POPOV, V.N., kand.tekhn.nauk;
TARASOV, A.N., inzh.; POTAPOV, Yu.A., inzh.

Results of using the TSNIDI combustion chamber for KDM diesel tractors.
Trakt. i sel'khozmash. 30 no.9:15-17 S '60.   (MIRA 13:9)

1. TSentral'nyy nauchno-issledovatel'skiy dizel'nyy institut (for
Sokolov). 2. Chelyabinskiy traktornyy zavod (for Potapov).
(Diesel engines)

KOVCHIN, S.A.; TARASOV, A.N.

Transfer functions and schematic diagram of a loaded amplidyne
amplifier. Trudy LPI 240:48-58 '64.
(MIRA 17:11)

TARASOV, A.N., inzhener-gidrograf

Accuracy of sound velocity corrections to values of depths measured
by echo-sounding. Inform. biul. Sov. antark. eksp. no.24:33-37
'60.
(MIRA 14:5)

1. Gidrograficheskoye predpriyatiye Glavsevmorputi.
(Sonar)

TARASOV, A.N.

Use of radioactive chromium in determining the quantity of
circulating blood and total erythrocytic mass in actually
healthy subjects and in patients with erythremia. Med.rad.
no.1:45-48 '62.

(MIRA 15:1)

1. Iz kafedry voyennoOmorskoy i gospital'noy terapii Voyennc-
meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
    (CHROMIUM—ISOTOPES)   (BLOOD—CIRCULATION)
    (ERYTHROCYTES)   (ERYTHREMIA)

TARASOV, A.N.

Estimating the coordination accuracy of measuring and oceanographic operations in the open sea (during navigation along a calculated route). Okeanologiia 1 no.4:701-710 '61.   (MIRA 14:11)

1. Gidrograficheskoye prepriyatiye Glavsevmorputi.
                                    (Hydrography)

TARASOV, A.N.

Fluctuation of the sea level in Alasheyev Bight on the
Enderbi Land. Okeanologiia 4 no.2:265-266 '64.

(MIRA 17:5)

1. Gidrograficheskoye predpriyatiye Ministerstva morskogo
flota SSSR, Leningrad.

S/169/62/000/005/083/093
D228/D307

AUTHOR: Tarasov, A. N.

TITLE: Magnetic observations of the 2nd Marine Expedition

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1962, 27, ab-
              stract 5G200 (Inform. byul. Sov. antarkt. ekspeditsii,
              no. 29, 1961, 43-44)

TEXT: Coworkers of the hydrographic detachment of the Continental
Antarctic Expedition determined D by three methods: from the sun's
bearings by a 127-mm magnetic compass on the ice; from the ship's
chief compass; and by comparing the readings of the main compass
with those of a gyrocompass on 8 bearings. A table is given for
the comparison of the measurement results with the values taken
from world magnetic maps. In latitudes 60 - 69°S and longitudes
20 - 34°E the divergences lie in the range 1 - 5°. The values of D
taken from the maps are exaggerated in all cases. /Abstracter's
note: Complete translation./

Card 1/1

TARASOV, A. O.

Dissertation: "Geobotnaical and Ecological Investigations of Steppe Pastures in
the Volga Highlands in Connection With Their Improvement." Cand Biol Sci,
Saratov State U, Saratov, 1953. (Referativnyy Zhurnal--Geologiya/Geografiya,
Moscow, Aug 54)

SO: SUM 393, 28 Feb 1955

TARASOV, A.O., kand.biol.nauk

Nature excursions in studying botany. Biol. v shkole no.2:26-31
Mr-Ap '58.
(MIRA 11:4)

1. Saratovskiy gosudarstvennyy universitet.
(Botany--Study and teaching)

TARASOV, A.O.

Effect of meteorological conditions on crop yields of densely-
tillering steppe grasses. Nauch. dokl. vys. shkoly; biol. nauki
no.4:123-126 '59.
(MIRA 12:12)

1.Rekomendovana kafedroy morfologii i sistematiki rasteniy
Saratovskogo gosudarstvennogo universiteta im. N. G. Chernyshevskogo.
(Steppe Flora)   (Meteorology, Agricultural)

COUNTRY   : USSR
CATEGORY   : Forestry. Forest Management.

ABS. JOUR.   : RZhBiol., No. 14 1959, No. 63213

AUTHOR   : Tarasov, A. I.
INST.   : Moscow Agricultural Academy imeni K. A. Timiryazev
TITLE   : Some Data from the Five-Year Experiment of Conducting
                 Maintenance Cutting in the Malakhovskaye Forestry
                 of the Ramenskiy Tree Farm

ORIG. PUB.   : Dokl. Mosk. s.-kh. akad. im. K. A. Timiryazeva, 1957,
                 vyp. 31, 297-300

ABSTRACT   : No abstract

Card: 1/1

Tarasov, Aleksandr Pavlovich

LENTAL', Genrikh Al'bertovich; TARASOV, Aleksandr Pavlovich; YURCHENKO,I.F.,
inzhener, redaktor; KOLTUNOVA,N.P., redaktor; DMITROV,P.A., tekhni-
cheskiy redaktor

[Wages of workers employed on railroad tracks and installations; a
reference manual] Oplata truda rabotnikov sluzhby puti i sooruzhenii;
spravochnik. Moskva, Gos .transp. zhel-dor. izd-vo, 1955. 139 p.
    (Railroads--Salaries, pensions, etc.)   (MIRA 9:3)

TARASOV, A. P.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Nikishov, M. I. Zaslavskiy, I. I. Tarasov, A. P. Yakimova, M. A. Lapshina, G. M. Davydov, V. I.	"Geographical Atlas of the USSR" (for the 7th and 8th grades of secondary schools	Central Scientific Research Institute of Geodesy, Aerial Photography and Cartography

SO: W-30604, 7 July 1954

TARASOV, A.P.

SEMENOV, A.I., otv.red.; FILIPPOV, Yu.V., prof., doktor tekhn.nauk, red.;
BASHLAVIN, V.A., kand.tekhn.nauk, red.; VOYNOVA, V.V., red.; GURARI,
Ye.L., kand.ekonom.nauk, red.; GUREVICH, I.V., red.; ZHIV, I.S., red.;
ZARUTSKAYA, I.P., red.; ZASLAVSKIY, I.I., red.; KOZLOV, F.M., red.;
NIKISHOV, M.I., kand.geograf.nauk, red.; SADCHIKOV, S.F., red.;
TIKHOMIROV, D.I., red.; TUTOCHKINA, V.A., red.; BALANTSEVA, I.A., red.
kart; BOGDANOVA, L.A., red.kart; BOCHAROVA, I.L., red.kart; VENEVTSEVA,
G.P., red.kart; VOLKOVA, A.P., red.kart; GOSTEVA, N.A., red.kart;
YEFIMOVA, G.N., red.kart; ZHIV, D.I., red.kart; KRAVCHENKO, A.V., red.
kart; KUBRIKOVA, N.S., red.kart; KUZNETSOVA, N.A., red.kart; KURSAKOVA,
I.V., red.kart; LOBZOVA, N.A., red.kart; MERTSALOVA, L.M., red.kart;
MOSTMAN, S.L., red.kart; PANFILOVA, M.V., red.kart; SEMENOVA, V.D.,
red.kart; SMIRNOVA, T.N., red.kart; TERESHKOVA, V.S., red.kart;
FEDCROVSKAYA, G.P., red.kart; FETISOVA, N.P., red.kart; FIL'GUS, Z.Kh.,
red.kart; SHAPIRO, Ye.M., red.kart; SHISHKIN, Ye.A., red.kart; YASHU-
NICHKINA, Ye.G., red.kart. V razrabotke kart prinimali uchastiye:
ALISOV, B.A., prof.; BERZINA, M.Ya.; VASILEVSKIY, L.I.; GAVRILOVA,
S.A., kand.geograf.nauk; GINZBURG, G.A., kand.tekhn.nauk; DOBOSHINSKAYA,
I.B.; YEVSTIGNEYEVA, A.I.; LAVRENKO, Ye.M., prof.; LOZINOVA, V.N., kand.
tekhn.nauk; MILANOVSKIY, Ye.Ye., kand.geologo-mineral.nauk; MIKHAYLOV,
A.A., prof.; MYSHKIN, Ye.P.; PUZANOVA, V.F., kand.geograf.nauk;
(Continued on next card)

SEMENOV, A.I.——(continued) Card 2.
    ROZOV, N.N., prof.; SMIRNOV, D.I.; TARASOV, A.P.; TROFIMOVSKAYA,
    Ye.A., kand.geograf.nauk; TUGOLESOV, D.A., kand.geologo-mineral.
    nauk. ZININ, I.F., tekhn.red.

[Geographical atlas for secondary school teachers] Geograficheskii
atlas; dlia uchitelei srednei shkoly. Izd.2. Moskva, Glav.upr.
geodezii i kartografii MVD SSSR, 1959. 191 p.   (MIRA 12:11)

1. Predstavitel' Nauchno-issledovatel'skogo instituta metodov obu-
cheniya Akademii pedagogicheskikh nauk RSFSR (for Zaslavskiy).
2. Predstavitel' Upravleniya shkol Ministerstva prosvyashcheniya
RSFSR (for Tutochkina). 3. Chleny-korrespondenty AN SSSR (for Lavrenko,
Mikhaylov).
                        (Maps)

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SOV/58-59-7-15670

24.7700

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 7, pp 144 - 145 (USSR)

AUTHOR: Tarasov, A.P.

TITLE: Study of Dielectric Losses in Ionic Crystals at High Temperatures

PERIODICAL: Uch. zap. Leningr. gos. ped. in-ta im. A.I. Gertsena, 1958, Vol 148, pp 123 - 129

ABSTRACT: The author sets himself the task of clarifying and specifying the nature and mechanism of dielectric losses in ionic crystals at high temperatures. He studied ionic crystals of NaCl, KCl, KBr, KI and NaF, from which samples 1 to 1.5 mm thick were prepared. Before the start of measurements the samples were dried for 2 to 3 hours at temperatures of 150° to 200°C. Measurements of the angle of losses were carried out at high frequencies $(10^6 - 3 \times 10^6 c)$ by the method of detuning the circuit and, partially, by the Q-meter method in the temperature range from 200° - 250° to 500° - 580°C. The temperature was measured with a thermocouple by the compensation method with an accuracy of $\pm$ 5°C. At low temperatures the absolute value of the angle of losses is small for all measured crystals and co-incides as regards its order of magnitude with the results of measurements

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SOV/58-59-7-15670

Study of Dielectric Losses in Ionic Crystals at High Temperatures

carried out by other authors. With a rise in temperature the angle of losses increases and at 500° to $580^\circ C$ attains values which exceed those obtained at room temperature by a factor ranging from 10^2 to 10^3. At high temperatures this rise exhibits an exponential character. Hence it follows, according to the author, that at high temperatures dielectric losses in ionic crystals are losses in conductivity. On the basis of these and other data appearing in the literature, the author comes to the conclusion that in ionic crystals two types of dielectric loss can be observed in the entire investigated temperature region: losses of a relaxation character and losses in conductance. One and the same mechanism lies at the foot of these two processes: the formation of weakly bound ("activated") ions, which, in the presence of variable voltage, may lead simultaneously to both open conductance and thermal ionic polarization. As the frequency increases, relaxation processes must play a greater role, while open conductance declines in importance.

Yu.S.K.

Card 2/2

S/196/62/000/018/007/017
E194/E155

AUTHOR: Tarasov, A.P.

TITLE: An investigation of dielectric loss in ionic crystals
            at high temperatures

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,
            no.18, 1962, 5, abstract 18 B 25. (Uch. zap. Stalingr.
            gos. ped. in-ta, no.11, 1959, 98-106).

TEXT: Single crystals of NaCl, KCl, KBr and Kl were used in
measurements of ε and $\tan\delta$ as functions of temperatures from
normal ambient to about 600 °C. At a frequency of about 2 Mc/s,
ε increases linearly with temperature up to 400.- 500 °C and then
increases more rapidly, reaching a value of 6 - 7. At temperatures
below 250 °C, $\tan\delta$ is less than 3×10^4 and alters little with
temperature; at higher temperatures the increase is approximately
exponential. At 500 °C $\tan\delta$ is of the order of 0.1 - 1.
At frequencies of 3 Mc/s and 10 Mc/s in KBr crystals $\tan\delta$
increases exponentially with rising temperature and falls with
frequency. The increase in $\tan\delta$ and ε with temperature is

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An investigation of dielectric ...   S/196/62/000/018/007/017
E194/E155

explained by increase in the number of weakly-bound ions as the temperature rises.
6 figures, 11 references.

Abstractor's note: Complete translation.

Card 2/2

TARASOV, A. S.

USSR/Electricity - Personalities

Nov 51

"Professor A. V. Orlovskiy (His 50th Birthday and 25 Years of Pedagogical and Public Activity)," Prof A. D. Nesterenko, Corr Mem, Acad Sci Ukrainian SSR, Prof I. I. Groben', Dr Tech Sci, Docent V. G. Kholmskiy, Cand Tech Sci, K. V. Zubanov, Chief Engr, Kievenergo, Yu. V. Kartashevskiy, Chief Engr, Glavenergo MKKH, Ukrainian SSR, A. S. Tarasov, Dir, Kiev Heat and Power Sta, A. A. Zayko, Engr

"Elektrichestvo" No 11, p 91

Orlovskiy has been head of the Chair of Central Elec Power stations, Kiev Polytech Inst since 1937, and Dean of the Elec Engineering Faculty of the latter institute since 1944. At present, he is directing work in the Kiev Polytech Inst on the problem of generating reactive power in mercury-converter units. Orlovskiy has trained more than 1,500 elec engineers.

201T68

TARASOU, A.S.

GVOZDEV, Vlas Semenovich, kand.tekhn.nauk; VAKHRAMEYEV, Boris Alekseyevich,
    inzh.; GERMAN, Avraam L'vovich, inzh.; KOSTIN, Konstantin Fedorovich,
    inzh.; LEVINTOV, Samuel' Davidovich, kand.tekhn.nauk; TARASOV, A.S.,
    inzh., retsenzent; YERMAKOV, N.P., tekhn.red.

[The equipment of rural hydroelectric power plants] Oborudovanie
sel'skikh gidroelektricheskikh stantsii. Izd. 2-oe, perer. Pod.
obshchei redaktsiei V.S.Gvozdeva. Moskva, Gos.nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1957. 423 p.   (MIRA 11:2)
        (Hydroelectric power stations)

TARASOV, A.S.

Anesthesia during resection of the lungs in children and ado-
lescents. Probl.tub. 38 no.1:85-88 '60.   (MIRA 13:10)
    (LUNGS—SURGERY)   (ANESTHESIA)

TARASOV, A. S.

Cand Med Sci - (diss) "Intubational narcosis in the resection
of lungs in patients with pulmonary tuberculosis in childhood
and teen-age years." Sverdlovsk, 1961. 24 pp;(Sverdlovsk
State Med Inst); 200 copies; price not given; (KL, 10-61 sup,
227)

Tarasov (F.)

36-72-11/13

AUTHOR: Chuvayev, A.P., Tarasov, A.V., Nikandrova, G.T.

TITLE: Experiment in Controlling the Development of Powerful Convective
             Clouds over Large Areas (Opyt regulirovaniya razvitiya oblakov
             moshchnoy konvektsii nad znachitel'noy ploshchad'yu)

PERIODICAL: Trudy Glavnoy geofizicheskoy observatorii, 1957, Nr 72, pp. 127-133
             (USSR)

ABSTRACT: In July 1956 a laboratory of the Main Geophysical Observatory (CGO),
             in cooperation with the Third Division of the State Scientific
             Research Institute of the Civil Air Fleet, conducted a field
             experiment in the dispersion of storm centers in powerful cumulus
             clouds with super-cooled tops. Dry ice particles, 0.5-2.0 cm in
             diameter were seeded along the edge of a field of clouds, whose
             individual summits rose over 5,000 m. Seeding, which lasted 20 min.,
             was executed in three straight lines, running 6 km apart and 40 km
             long, covering an area of 40 x 15 km and using 65 kg of dry ice.
             Activation resulted in an almost complete disappearance of clouds in
             the entire zone of operation, without precipitation forming and
             reaching the ground, with only a few insignificant traces of clouds
Card 1/2   remaining. At the same time nearby masses of powerful cumulus clouds

36-72-11/13
Experiment in Controlling the Development of Powerful Convective Clouds
Over Large Areas (Cont.)

   and groups of frontal clouds continued to develop during and after
   seeding. There are 7 figures, consisting of a synoptic map, a weather chart,
   and photographs of clouds taken at various points during the experiment.

AVAILABLE: Library of Congress

Card 2/2

TARASOV, A.V., agronom

We are increasing the fertility of soils. Zemledelie 23 no.1:73
Ja '60.   (MIRA 13:12)

1. Kolkhoz imeni Shchorsa, Krolevetskogo rayona, Sumskoy oblasti,
USSR.
          (Krolevets District--Soil fertility)

TARASOV, A.V., agronom

Applying ammonia water to industrial crops. Zemledelie 23
no.6:79 Je '61.

(MIRA 14:6)

1. Kolkhoz imeni Shchorsa, Krovlevetskogo rayona, Sumskoy oblasti.
        (Field crops—Fertilizers and manures)
                (Ammonium hydroxide)

TARASOV, A.V.

Effect of anisotropy of rocks on the results obtained by the
electric correlation method. Mat.po geol.i pol.iskop.Urala
no.10:147-156 '62.   (MIRA 16:2)
        (Electric prospecting)   (Anisotropy)

TARASOV, A.V., aspirant

Strip spraying in corn fields. Zashch. rast. ot vred. i bol.
9 no.3:16-17 '64.   (MIRA 17:4)

1. Institut lubyanykh kul'tur, Glukhov, Sumskaya obl.

TARASOV, A.V.; POSPELOV, A.E.; NOVIKOV, O.I.

Pressure and vapor composition in the systems NaCl - CsCl and KCl - CsCl. Vest.LGU 20 no.22:101-108 '65.

(MIRA 18:12)

TARASOV, A.V., inzh.

Pile foundation of the main building. Energ. stroi. no.4:
3-5 '65.   (MIRA 18:12)

BUDANOV, V.P.; TARASOV, A.Ya.; VODOP'YANOV, A.N.

Knockmeter with phase indicator. Avt.i trakt.prom. no.4:15-17
Ap '56.   (MLRA 9:8)

1. Gor'kovskiy avtozavod imeni Molotova.
                    (Automobiles--Engines--Testing)

TARASOV, A. YA.

AUTHOR: Tarasov, A.Ya.

113-58-6-10/16

TITLE: Universal Test Stand for Balancing Experimental Cardan Shafts
(Universal'nyy stend dlya balansirovki opytnykh kardannykh
valov)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 6, pp 30-31 (USSR)

ABSTRACT: The construction-experimental section of the Gor'kiy Automobile
Plant prepared a test stand for the balancing of experimental
Cardan shafts. The test stand is connected with a direct
current dynamo with revolution regulation limits of from 0 to
3,000 per minute. The Cardan shaft is connected at one end
with the dynamo axle and at the other with an axle placed in
conic roller bearings. These bearings are enclosed in a frame
fixed to a spring which can move along the test stand so that
shafts of different length can be balanced. If the shaft is
not balanced, oscillations of the spring occur and are trans-
mitted to an inductive vibro-indicator. The electromotive force
is induced in the vibro-indicator proportionally to the speed
of the vertical oscillations of the shaft on the spring; at
the constant revolutions of the shaft, this force is proportional
to the amplitude of oscillations. On the screen of an oscillo-
Card 1/2   graph connected with the vibro-indicator, the amplitude of

113-58-6-10/16

Universal Test Stand for Balancing Experimental Cardan Shafts

oscillations denotes the extent of unbalance. To determine
the phase of unbalance, a phase-indicator is used. The rotor
of this indicator is pressed on the central opening of the
butt of the dynamo axle through a conical rubber muff that
rotates synchronically with the dynamo axle. Each rotation
of the phase-indicator produces both positive and negative
current impulses, which are transmitted to the oscillograph.
Two kinds of oscillograms are formed on the slides of the
oscillograph, one from the vibro-indicator, the other from the
phase indicator. In changing the position of the phase in-
dicator, the moment of sending electric impulses is also changed
and the oscillograms will be different every time. By gradual
changes, the place of the unbalance will finally be located.
This procedure is described in detail. The details of the in-
ductive indicator and of the phase-indicator are also given.
There are 5 figures and 4 Soviet references.

ASSOCIATION: Gor'kovskiy avtozavod (The Gor'kiy Automobile Plant)

Card 2/2   1. Automobile industry--USSR   2. Shafts--Balancing--Test methods
               3. Shafts--Balancing--Test results   4. Instrumentation--Applications

AUTHOR: Tarasov, A Ya.   SOV/113-59-2-7/20

TITLE: The Investigation of Valve Knocking in "GAZ" Engines
               (Issledovaniye stuka klapanov dvigateley GAZ)

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 2, pp 14-15 (USSR)

ABSTRACT: The author describes a method used at the Gor'kiy Automo-
               bile Plant to determine the cause of valve knocking The
               method employs a phase indicator which ascertains the
               valve position at the time of knocking, i.e., the knocking
               phase. Tests with the "M-20" automobile engine reveal that
               the knocking coincides with the moment when the valve is re-
               turning to its seat and is in fact caused by a too high
               return-speed. The cams in these type engines have been
               redesigned, changing the valve return speed from 0.0475 mm/
               degree to 0.0124 mm/degree and thus the knocking has been
               eliminated. The redesigning of camshafts is also recommend-
               ed for "GAZ" truck engines. There are 2 graphs, 1 diagram
               and 4 Soviet references.

ASSOCIATION: Gor'kovskiy avtozavod (Gor'kiy Automobile Plant)

Card 1/1

TARASOV, A.Ya.

Investigating operation stresses in passenger car bodies.
Avt. prom. no. 1:10-13 Ja '61.   (MIRA 14:4)

1. Gor'kovskiy avtozavod.
        (Automobiles—Bodies) (Strains and stresses)

TARASOV, A.Ya.

Investigating the noise and vibration in automobiles of the Gorkiy Automobile Plant. Avt.prom. 27 no.11:28-32 N '61.
(MIRA 14:10)

1. Gor'kovskiy avtozavod.
(Gorkiy--Automobiles--Testing)

TARASOV, A.Ya.

Balancing machinery in shops. Avt.prom. 28 no.12:36-38 D '62.
(MIRA 16:1)

1. Gor'kovskiy avtozavod.
(Balancing of machinery)

DARMANYAN, Petr Emmanuilovich; TARASOV, B., red.

    [Division Commander Kikvidze] Nachdiv Kikvidze. Volgograd,
Volgogradskoe knizhnoe izd-vo, 1963. 172 p.
                                (MIRA 17:8)

Condensation of hydrocarbons by sulfuric acid. B. TARASOV AND N. POPOVA.
Neftyanoe Khozyaistvo 18, 280-1(1930).—On treating a gasoline fraction with 90%
H_2SO_4 not only a polymerization of the unsatd. substances but also a condensation
between them and the aromatics present in the fraction is effected. The presence of satd. substances
in the newly formed fractions leads to the conclusion that they were formed during
treatment, whereby more aromatics than satd. compds. were formed, as is seen by the
low aniline points of the treated fractions.   A. A. ROBNTLINGK

Thermal decomposition of sulfur compounds in petro-
leum during the distillation. B. Tarasov and I. I. Staros-
tin. *Groznenskii Neftyanik* 7, No. 6, 38-45(1937). Of
the S compds. investigated those present in the Malgobek
crude oil are the most stable and those in the Ishimbaev
crude oil are the least stable. Thus on distg. the oils at
[...], 83% of S compds. present in the Malgobek crude oil
are decompd. while 22% and 10% of S compds. present in
the Kala and the Ishimbaev crude oils, respectively, are de-
compd. at the above temp. The decompn. is greatly
lowered by distg. *in vacuo*. In a rapid distn. at [...]
67.4% of S compds. present in Kala and 79.1% present in
the Ishimbaev crude oil are decompd. At the same temp
but under vacuum the decompns. are 50.3 and 54.2%, resp.
The time of cracking is important. With long time of
cracking secondary reactions take place which lead to the
formation of high-mol. cyclic compds. The latter remain
in the bottoms and thus decrease the total decompn.
A. A. Rochtlingk
Forty-three references.

PROSVIRIN, V. (Riga); TARASOV, B. (Riga)

Nitration of iron using high frequency current for heating. Vestis
Latv ak no.11:29-35 '59.   (EEAI 9:11)

1. Akademiya nauk Latviyskoy SSR, Institut mashinovedeniya.
        (Nitration)   (Iron)   (Electric currents)

PROSVIRIN, V.(Riga); TARASOV, B. (Riga)

Nitration of steel by using high-frequency current for heating.
Vestis Latv ak no.11:43-48 '60.

(EEAI 10:9)

1. Akademiya nauk Latviyskoy SSR, Institut avtomatiki i mekhaniki.

(Nitration)   (Steel)   (Electric currents)

DOBRUSHIN, David Solomonovich; TOROKHOV, Boris Mikhaylovich, inzh.;
   TARASOV, B.A., red.; IZHBOLDINA, S.I., tekhn. red.

[Guardsmen of cavalry corps] Konnogvardeitsy. Volgograd,
Volgogradskoe knizhnoe izd-vo, 1963. 187 p.   (MIRA 16:9)
   (Russia--Army--Cavalry)   (World War, 1939-1945)

GUSEVA, L.V., red.; NOVITSKAYA, L.V., red.; RYABOVA, M.G., red.;
TARASOV, B.A., red.

[Youth brigades] Brigady iunykh. Voigograd, Nizhne-
Volzhskoe knizhnoe izd-vo, 1964. 74 p. (MIRA 18:2)

LEONIDOV, N.K.; GOKHMAN, Yu.I.; TARASOV, B.Ye.

Effectiveness of blowing various reagents into a blast furnace.
Stal' 24 no.7:584-587 Jl '64.   (MIRA 18:1)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu metallur-
gicheskikh zavodov.

TARASOV, B.F., inzh.

Piezoelectric locomotive weights. Sbor. LIIZHT no.158:166-172
'58.   (MIRA 11:6)
            (Piezoelectric substances) (Locomotives)

TARASOV, B.F., aspirant

Effect of the force of pressing a spring band on the size of the parameter of its rigidity. Sbor. trud. LIIZHT no.174:129-134 '60.   (MIRA 15:11)

(Springs (Mechanism))

TARASOV, B.F., inzh.; KARASEV, Ye.M.

Locomotive scales using magentoresilient transducers. Trudy LIIZHT
no.175:138-146 '61.   (MIRA 15:12)
    (Railroads—Equipment and supplies) (Scales (Weighing instruments))

.

TARASOV, B.F., assistent

Determining the stiffness parameter of leaf springs. Sbor. trud.
LIIZHT no.197:104-115 '62.   (MIRA 16:8)
(Car springs—Testing)

TARASOV, B. G.

"A Method of Checking Gas Analyzers, Based on the Comparisons of the Heat Conductivity of Gases." Cand Tech Sci, All-Union Sci-Res Inst of Metrology, Leningrad, 1954. (RZhKhim, No 22, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

TARASOV, B. G., Cand of Tech Sci -- (diss) "Study of the Gas Generation

in Preparatory Processing Under Conditions of the Prokop'yevskiy

Deposits of Kuzbass and the Prognosis of Their Gasability," Leningrad

1959, 31 pp (Leningrad Mining Institute im Plekhanov) (KL, 1-60, 123)

TARASOV, B.G.

Deformation of a coal seam and gas emission in development
workings. Zap. LGI 38 no.1:176-190 1959   (MIRA 14:3)
        (Coal mines and mining)

TARASOV, B.G., inzh.

Connection between gas liberation and crushing of coal. Izv. vys.
ucheb. zav.; gor. zhur no. 42-50 1960.   (MIRA 14:3)

- 1. Kemerovskiy gornyy institut. Rekomendovana kafedroy rudnichnoy
ventilyatsii i tekhniki bezopasnosti.
(Coal mines and mining)   (Mine gases)

TARASOV, B.G., kand.tekhn.nauk

Protective holes as a means of preventing sudden outbursts of
coal and gas in development workings. Izv. vys. ucheb. zav.;
gor. zhur. no.8:110-119 '61.   (MIRA 15:5)

1. Kemerovskiy gornyy institut. Rekomendovana kafedroy
rudnichnoy ventilyatsii i tekhnii bezopasnosti Kemerovskogo
gornogo instituta.
                    (Mine gases)

KOKORIN, P.I., prof.; TARASOV, B.G., kand.tekhn.nauk

Comments on M.A.Krainikov's article "Air analysis for gas content
and ventilation control in mines." Bezop.truda v prom. 5 no.12:
23-26 D '61.   (MIRA 15:1)

1. Zaveduyushchiy kafedroy rudnichnoy ventilyatsii i tekhniki
bezopasnosti Kemerovskogo gornogo instituta (for Kokorin).
                (Mine ventilation) (Krainikov, M.A.)

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S/188/61/000/003/002/002
3125/3203

26.2340
9,3130 (1003, 1140, 1141)

AUTHOR: Tarasov, B. G.

TITLE: .... ing of electrons in an accelerating field

PERIODICAL: Moskovskiy Universitet. Vestnik. Seriya III. Fizika
               astronomiya, no. 3, 1961, 35 - 42

TEXT: The author derives a formula for the amplitude of the n-th harmonic
of the amperage of the beam as a function of the accelerating voltage, the
electron path, and other parameters. The interaction of electrons in a
beam in the grouping of electrons in the space behind the outlet of the
modulator may be neglected if the path of electrons in the grouping space
is shorter than a quarter of the effective wavelength of the plasma oscil-
lations. The author produced electron beams of relatively high energy
with prolonged interaction in the delaying system with an experimental
arrangement in which the electrons are simultaneously grouped and accel-
erated behind the outlet of the electron beam from the modulator. This
required thorough investigations of the grouping of electrons in a suffi-
ciently strong accelerating field and, above all, an estimation of the

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Grouping of electrons...

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fraction of the higher harmonics in the beam at different distances from the modulator, and different accelerating voltages. The author solves this problem in kinematic approximation. The electron reaches the collector in the time

$$\tau = t - t_0 = \frac{-\left[1 + \xi_1 \sin\left(\omega t_0 - \frac{\psi_0}{2}\right)\right] + \left[1 + \frac{\xi_1}{U^2} \sin\left(\omega t_0 - \frac{\psi_0}{2}\right)\right] U}{\frac{v_0}{2x}(U^2 - 1)} \quad (5)$$

with $\frac{1}{\omega} \frac{v_0}{2x}(U^2 - 1) = \frac{1}{\Omega}$, and after passing over to the corresponding angles of aperture

$$\tau = t - t_0 = \frac{\Omega}{\omega}(U - 1) - \frac{1}{\omega} \sum_{n-1} \frac{2}{n} J_n\left[n\Omega\xi_i\left(1 - \frac{1}{U}\right)\right] \times$$

$$\times \sin n\left[\omega t - \frac{\psi_0}{2} - \Omega(U - 1)\right];$$

results. Here, $J_n(x)$ is the Bessel function of n-th order. By substituting (8) in $i_\nu(x,t) = -i(0,t_0)\frac{\partial \tau}{\partial t}$ (2), the relative value of the variable component of the amperage in the beam is obtained as a function of the

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Grouping of electrons...

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quantities determining the grouping conditions

$$\frac{i_\sim(x,t)}{i(0,t_0)} = -\frac{\partial\tau}{\partial t} = \sum_{n=1}^{\infty} 2J_n\left[n\Omega\xi_1\left(1-\frac{1}{U}\right)\right]\cos n\left[\omega t - \frac{\psi_0}{2} - \Omega(U-1)\right], \quad (8a)$$

The relative amount of the amplitude of the n-th harmonic of the current is

$$i_{\sim n}(x,t) = 2J_n\left[n\Omega\xi_1\left(1-\frac{1}{U}\right)\right]. \quad (9)$$

An accelerating electric field had been studied under slightly different conditions by V. I. Kalinin (Generirovaniye detsimetrovykh·i santimetro-vykh voln. Svyaz'izdat, 1948). Experimental part; A vacuum tube (Fig. 1) was developed to check the results found. The electron beam passes from the cathode through the grid of the modulator 2 to the collector 3. The collector is connected with the massive nickel cylinder 4. There is no magnetic focusing of the beam. On the arrival of the electrons at the

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collector, a transition radiation is formed whose directional diagram is symmetric to the beam axis, and has a maximum in the collector plane perpendicular to the axis. Modulation was conducted at $3 \cdot 10^9$ cps, and the principal measurements were made at the frequency of the ninth harmonic of the beam current. A signal of the twelfth harmonic was also observed, but its power was insufficient for dependable data. The author determined the dependence of the radiation power on the accelerating voltage at the collector, and on the modulator power at different distances between modulator and collector. At accelerating voltages of the order $U_{coll} = 4.0 - 5.0$ kv, the inequality $4r_o/Tv > 1$ (1a) is no longer valid. Here, T is the period of the modulating field, r_o the radius of the electron beam, and v the constant component of the electron velocities in the beam. This is one possible cause of the difference between theoretical and experimental data at high accelerating voltages. At an amperage i = 8 in the beam, $\omega_p = 6.9 \cdot 10^8$ 1/sec, and the effective plasma wavelength $\Lambda_q = 27.5$ cm. The kinematic solution of the problem is, therefore, possible at $x < \sim 7$ cm.

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Grouping of electrons...

Under the conditions considered, (9) can be simplified to $i_{\sim n}(x,t) =$

$$=2J_n\left[\frac{n\omega x U_1}{v_0 U_0 U(U+1)}\right]$$ (9a). The author studied, above all, the dependence of
the amplitude of the harmonic of the amperage at the collector on the
accelerating voltage and on the distance between collector and modulator.
In the range of accelerating voltages of 2-5 kv, the maxima of grouping
lie at distances L = 10-20 mm between collector and modulator. Therefore,
the curves for the dependence of the signal of the ninth harmonic of the
modulation frequency on the voltage at the collector were studied during
its shift within these limits. Fig. 2 shows the result of this study.
With increasing distance between collector and modulator, the voltages
corresponding to the maxima of a certain order also increase almost pro-
portionally. With the minimum distance L = 10 mm, the signal in the
minima of grouping has a relatively high level, and the oscillation am-
plitude in the second maximum is higher than in the first one. Similar
conditions of grouping must be obtained if, with increasing distance x,
the amplitude of the high-frequency voltage U_1 between the modulator

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grids is proportionally reduced. The agreement between theory and exper-
iment is satisfactory. Under the mentioned conditions, formulas (8a) and
(9a) are suited for calculating frequency multipliers. There are 5 fig-
ures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc. The reference
to the English-language publication reads as follows: Weinstein M. and
Von Foerster H. M. J. Appl. Phys., no. 4, 344, 1956.

ASSOCIATION: Kafedra teorii kolebaniy (Department for the Theory of
             Oscillations)

SUBMITTED: October 25, 1960

Card 6/6

L 15314-63   EWT(m)/BDS   APFTC/ASD   S/0058/63/000/005/H013/H013

ACCESSION NR: AR3003345   5/

SOURCE: RZh. Fizika, Abs. 5Zh77

AUTHOR: Tarasov, B. G.

TITLE: Experimental study of the Vavilov-Cherenkov effect at microwave frequencies

CITED SOURCE: Sb. aspirantsk. rabot. Kazansk. un-t. Tochnyye n. Kazan', 1962, 62-97

TOPIC TAGS: Cerenkov effect, microwave frequency, calcium titanate ceramic

TRANSLATION: An experimental study was made of Cherenkov radiation of a modulated electron beam passing through a channel in a dielectric (type T-150 ceramic made of calcium titanate, $\varepsilon \sim 150$). Studies were made of the radiation power at different harmonics of the modulating frequency ($f = 3 \times 10^9$ cps), of the angular distribution of the radiation, and of its polarization as functions of the beam electron energy. Results of experiments made on the third, ninth, twelfth, and fifteenth harmonics at electron energies 2.4—4.0 kV are presented and discussed. The dielectric radiators were chosen both in the form of a cylinder and in the form of a truncated cone with channel d $\sim$ 3 mm on the axis. The Cherenkov radiation was

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ACCESSION NR: AR3003345

picked off essentially with the aid of waveguides of different cross section, while
the registration of the radiation and the estimate of its power were made with the
aid of a spectrum analyzer calibrated beforehand at frequencies of different harmon-
ics of the modulating voltage. A total decrease in signal power by 14.3 dB is ob-
tained on going from the third to the fifteenth harmonic, (on the average, 1.2 dB
from harmonic to harmonic). A detailed study is made of the angular distribution of
the radiation on the ninth harmonic, as a function of the electron energy and the
form of the dielectric radiator. The principal radiation is concentrated in the an-
gles predicted by the theory. The radiation is 87 per cent polarized in such a way
that the electric radiation vector lies in the plane passing through the ray and the
electron beam. N. Khizhnyak

DATE ACQ: 17Jun63   SUB CODE: PH   ENCL: 00

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L 47344-65   EWT(m)   Peb   DIAAP
ACCESSION NR: AR5009716   UR/0058/65/000/002/H027/H027

SOURCE: Ref. zh. Fizika, Abs. 2Zh181

AUTHOR: Tarasov, B. G.

TITLE: Cerenkov radiation of an electron beam bunched by a traveling wave tube operating in the self excitation mode

CITED SOURCE: Sb. Itog. nauchn. konferentsiya Kazansk. un-ta za 1962 g. Kazan', Kazansk. un-t, 1963, 64-66

TOPIC TAGS: Cerenkov radiation, traveling wave tube, slow wave system, electron bunching

TRANSLATION: Results are reported of an investigation of Cerenkov radiation in installations in which use is made of the interaction between a dielectric with large ϵ and a beam of electrons having a velocity of several kilovolts, bunched with the aid of slow-wave sys-

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tems of the type used in traveling-wave tubes. This method is much
better than klystron bunching, since the lifetime of the bunches
prior to becoming debunched is larger than in the latter case. An
experimental set-up for investigations of the Cerenkov effect with a
buncher of the traveling-wave tube type, operating in a self-excita-
tion mode, is described. The maximum Cerenkov radiation power ob-
tained during the course of the investigation was 10 μW at a wave-
length 18.64 cm. The 17th, 18th, and 19th harmonics of the oscilla-
tions were observed. M. Golant.

SUB CODE: NP, EC   ENCL: 00

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L 47343-65 EWT(m) Peb DIAAP

ACCESSION NR: AR5009717   UR/0058/65/000/002/H027/H027

SOURCE: Ref. zh. Fizika, Abs. 2Zh182

AUTHOR: Tarasov, B. G.

TITLE: Cerenkov radiation excited by an electron beam bunched in a traveling-wave tube with external excitation

CITED SOURCE: Sb. Itog. nauchn. konferentsiya Kazansk. un-ta za 1962 g. Kazan', Kazansk. un-t, 1963, 66-69

TOPIC TAGS: Cerenkov radiation, traveling wave tube, electron bunching

TRANSLATION: Results are reported of an experimental investigation of Cerenkov radiation excited by an electron beam. The electron beam was bunched with a traveling-wave tube with external excitation, designed to operate in the 3 cm wavelength band. The Cerenkov emitter

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was a cylinder made of T-150 ceramic with a channel along the axis;
the channel diameter was 1.2 mm. The Cerenkov radiation was observed
at the 4th harmonic. Curves were plotted of the output signal
against excitation power of the traveling-wave tube helix and against
the helix voltage for the fundamental frequency and for the 2nd and
4th harmonics of beam current. The attenuation of the output signal
on going over to each higher harmonic in succession was 20 dB. Ac-
cording to the calculations, the bunch in the channel does not spread
out over a distance ~1.5 cm, i.e., the debunching was sufficiently
slow. It is concluded that a traveling wave tube with external ex-
citation serves as an effective buncher for Cerenkov emitters. M.
Golant.

SUB CODE: NP, EC. ENCL: 00

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TARASOV, B.G., dotsent

Gas dynamics of a coal seam and contour protection of workings.
Izv. vys. ucheb. zav.; gor. zhur. 6 no.7:98-104 '63. (MIRA 16:9)

1. Kemerovskiy gornyy institut. Rekomendovana kafedroy rudnichnoy
ventilyatsii Kemerovskogo gornogo instituta.
(Mine gases)

TARASOV, B.G., kand. tekhn. nauk; KOSHELEV, N.M., inzh.

What caused the explosion of methane at the Taibinskaya Mine?
Bezop. truda v prom. 8 no.10:12-14 O '64.   (MIRA 17:11)

1. Kemerovskiy gornyy institut.

ZHARKOV, [...], inzh., T'EYSLER, [...], inzh., TARASOV, B.G., inzh.

Manometric method of controlling mine interferometers. Bezop.
truda v prom. 8 no.12:48-49 D '64.   (MIRA 18:3)

KOKORIN, P.I., prof.; TARASOV, B.G., dotsent, kand. tekhn. nauk

Improving gas conditions in mines. Besop. truda v prom. 8
no.11:31-34 N '64.   (MIRA 18:2)

KOKORIN, Petr Ivanovich; OREKHOVSKIY, Aleksey Aleksandrovich;
    TARASOV, Boris Gavrilovich; MAL'TSEVA, T.I., ved. red.

    [Measures for controlling traumatism within the limits of
    mine extraction areas] Mery bor'by s travmatizmom v predelakh
    vyemochnykh polei shakht. Moskva, Nedra, 1965. 145 p.
                                                (MIRA 18:12)

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S/120/62/000/004/033/047
E192/E382

24.6800

AUTHORS: Alekseyev, A.G., Gorelkin, A.S., Mozalevskiy, I.A.,
             Mozin, I.V., Tarasov, B.I. and Trokhachev, G.V.

TITLE: The use of permalloy pick-ups for mass magnetic
             measurements on the proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, vol. 7, no. 4, 1962,
             179 - 184

TEXT: Measurement of the relative magnetic fields at
injection fields of H = 90 Oe is effected by means of permalloy
pick-ups with magnetizing coils (Giordano, S., Green, G.K. and
Rogers, E.J. Rev. Scient. Instrum., 1953, 24, 848). The
magnetizing coil is supplied with DC and is connected in such a
way that the direction of the magnetic field H_K of the coil

and that of the measured field are in opposition. When the
magnetic field reaches the value H_K , a signal coil of the

pick-up produces a voltage pulse. The field H_i at the point

where the pick-up is situated is evaluated from the formula:

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The use of permalloy pick-ups ...

$\Delta t_i = 600$ µs.

pick-ups is varied by ± 10%, which corresponds to
The actual measuring equipment was connected to the pick-ups
by means of high-frequency cables. The magnetizing coils of the
pick-ups were connected in series and supplied with a current
of 150 mA, stabilized to within ± 0.02%. The current was meas-
ured by means of a potentiometer, the error of measurement being
0.02%. Since the width of the pulse produced by the pick-ups
was much greater than that required for achieving the desired
accuracy of the measurements, the pulses were suitably shaped by
means of shaping circuits. The equipment had to work in a hall,
where the perturbing electromagnetic fields were comparatively
strong, the spectral maxima occurring at 50 c.p.s. and
20 - 30 kc/s. The low-frequency interference was eliminated by
suitably choosing the intermediate stages of the forming circuits,
whilst the high-frequency noise was suppressed by means of an RC
filter. The equipment could measure time with an error of 4 µs
and the current with an error of 0.02%, so that the maximum
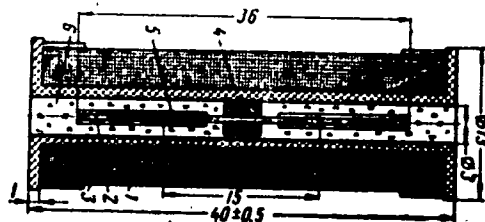measurement error did not exceed 0.1%. There are 4 figures.

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The use of permalloy pick-ups ...

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E192/E382

ASSOCIATION: Nauchno-issledovatel'skiy institut elektro-
fizicheskiy apparatury GKAE (Scientific
Research Institute of Electrophysical
Equipment, GKAE)

SUBMITTED: April 10, 1962

Fig. 2:

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KIRSANOV, V.I., inzh.; TARASOV, B.L.

Study of the deformations in the framework of industrial buildings under the effect of temperature. Sbor. trud. NII po stroi..
ASiA [Sverd.] no.8:90-99 '63.
(MIRA 16:10)

TARASOV, B.M., starshiy inzh.

Adjustment of trackside route-relaying block-type interlocking systems. Avtom., telem.i sviaz: 6 no.4:26-29 Ap '62.

(MIRA 15:4)

1. Laboratoriya signalizatsii i svyazi Severo-Kavkazskoy dorogi.

(Railroads--Signaling)

TARASOV, G.M.; NIKITIN, N.V., inzh.

Special features in the regulation of route relay interlocking systems in junction stations. Avtom., telem. i sviaz' 7 no.12:23-26 D '63. (MIRA 17:4)

1. Starshiy inzh. laboratorii signalizatsii i svyazi Severo-Kavkazskoy dorogi (for Tarasov). 2. Laboratoriya signalizatsii i svyazi Severo-Kavkazskoy dorogi (for Tarasov).